

Motorola 52nd Street

Boundaries:

The Motorola 52nd Street Superfund Site is divided into three Operable Units (OUs) and the Honeywell 34th Street Facility. The boundaries of OU1 are 52nd Street to the east, Palm Lane to the north, Roosevelt Street to the south, and 46th Street to the west. The approximate boundaries of OU2 are Roosevelt Street to the north, 46th Street to the east, Buckeye Road to the south and 18th Street to the west. Within OU2, the Honeywell facility extends from approximately 36th Street to the east to approximately 29th Street to the west, and is immediately north of the Sky Harbor Airport north runway. The boundaries of the OU3 Study Area are McDowell Road to the north, 20th Street to the east, Buckeye Road to the south, and Seventh Avenue to the west.

Site History:

Operable Unit 1 History

- ! The Motorola 52nd Street facility was originally constructed in 1956 and was in operation until the third quarter of 1999 when Motorola's Communications, Power and Signal Group was split off to become ON Semiconductor. Motorola remains responsible for the remediation effort related to its former operations at the 52nd Street facility.
- ! Until 1963, no municipal sewer was available thereby requiring on-site disposal of domestic and industrial waste in underground tanks, leaching fields, dry wells, pits, sumps, and surface disposal areas. The type of wastes that were known to be released to the environment at the facility are: solvents, acids, cyanides, and sanitary sewage. Solvents, such as trichloroethene (TCE); 1,1,1-trichloroethane (TCA); Freon; and perchloroethene (PCE), were dispensed to various Motorola operations at the facility.
- ! Three primary source areas have been identified at the Motorola 52nd Street facility: the Courtyard, the Acid Treatment Plant (ATP), and the Southwest Parking Lot (SWPL).

The Courtyard was the site of a 5,000 gallon TCA underground storage tank (UST) and a drywell that was approximately three feet in diameter and 15 feet deep. The drywell received solvents, mainly TCE and TCA, from 1963 to 1974. The solvents were used at the facility to remove greases, waxes, oils, and Photoresist. Soils and groundwater have been impacted with chlorinated solvents in this area. Additionally, free product solvent has been found in the bedrock at the Courtyard.

The ATP was built on a buried waste solvent line suspected of leaking and there were reports of solvent spills in the area.

From 1974 to 1976, the SWPL area was used extensively as a main staging area of waste chemicals stored in 55-gallon drums that were suspected of leaking.

- ! Site discovery occurred in November 1982 when Motorola reported that the 5,000 gallon UST located in the Courtyard area had leaked TCA.
- ! From January 1983 to December 1983, Motorola conducted a preliminary investigation (PI), which included the installation of 29 monitor wells (ten conventional wells and 19 multiport wells, with a total of 80 sampling ports). A report was submitted to ADEQ in December 1983. Analytical data indicated soil and groundwater contamination on the facility property, and groundwater contamination continuing to the west of the property. The highest concentrations of contaminants were found in the Courtyard area of the facility. TCE concentrations as high as 1,470,000 parts per billion (ppb) and TCA concentrations as high as 721,000 ppb were found in bedrock.
- ! In 1983, Motorola entered into a verbal agreement with the Arizona Department of Environmental Quality (ADEQ), U.S. Environmental Protection Agency (EPA), Arizona Department of Health Services (ADHS), Arizona Department of Water Resources (ADWR), Salt River Project (SRP), and the Cities of Phoenix and Scottsdale (the oversight committee) to characterize the nature and extent of contamination and recommend remedial actions.
- ! From October 1984 to June 1987, Motorola completed a remedial investigation and feasibility study (RI/FS) under the direction of the oversight committee. Twenty-eight potential sources were identified and investigated, such as: past surface discharges, spills, tank and pipe leaks, and discharges to leach fields and dry wells. It was determined that the majority of the contamination came from sources in the Courtyard area.
- ! An additional 21 monitor wells were installed during the RI/FS, nine of which were multiple completion wells.
- ! In November 1984, the initial soil gas investigation was conducted and was comprised of 69 soil gas probe locations covering about one square mile.
- ! From February through March 1985, a second soil gas survey was conducted that was comprised of 177 soil gas probe locations.
- ! In October 1985, a third soil gas survey was conducted to further define source areas. This soil gas survey included 134 locations on and around the 52nd Street facility. Mostly TCE, TCA, and PCE were detected in the soil gas. Highest concentrations observed were 50 ppb; 1,400 ppb; and 1,100 ppb, respectively.
- ! In September 1986, a pilot treatment plant (PTP) was constructed in the Courtyard area, which included two extraction wells.
- ! In June 1987, Motorola submitted the draft RI and FS Reports to ADEQ. The RI Report summarized the results of source characterization and site investigation. The FS Report established remedial objectives, identified alternative approaches, and evaluated alternative remedies. These draft documents were issued for public comment. As part of the PI and the

RI/FS, Motorola installed monitor wells at 75 separate locations both on-site and off-site (downgradient), and many were multiple completion wells (totaling 248 ports). Four additional wells were installed specifically for testing the hydraulic properties of the aquifer (known as aquifer testing). In addition, groundwater from nine private wells was sampled and analyzed.

- ! In 1988, a health assessment was completed by the Agency for Toxic Substances and Disease Registry (ATSDR) that concluded: “The site is unlikely to pose any threats to human health.” The report also states: “Although on-site and off-site groundwater is contaminated, contaminant levels at the point of extraction were below the levels of concern.”
- ! In June 1988, Motorola submitted a Remedial Action Plan (RAP) to ADEQ that proposed a remedial alternative. The remedial alternative comprises one part of the overall remediation of soil and groundwater contamination at the Motorola 52nd Street Site.
- ! In July 1988, ADEQ and EPA then held a public meeting on the proposed alternative.
- ! On September 1988, ADEQ and EPA issued official approval to implement the recommendations in the draft RAP in a Record of Decision (ROD) for the OU (later designated as OU1) interim remedy. The OU remedy selected consists of the following components: (1) on-site extraction and treatment of groundwater from the Courtyard and 50th Street area, (2) on-site extraction and treatment of vapor phase organic contaminants from soils from the Courtyard, ATP, and SWPL areas, (3) off-site extraction of groundwater designed to contain contaminant migration at the Old Crosscut Canal, (4) on-site treatment of groundwater extracted from off-site wells, and (5) use of all treated groundwater at the Motorola 52nd Street facility. The OU remedy is designed to provide overall protection of human health and the environment by containing migration of volatile organic compounds (VOCs) and to treat the extracted groundwater to a level which will meet both state and federal standards.
- ! In January 1989, a fourth soil gas survey was conducted in the Courtyard (ten sampling locations), SWPL (six sampling locations), and ATP areas (three sampling locations).
- ! In June 1989, Motorola and ADEQ entered into a Consent Order, lodged with the Arizona Superior Court, requiring Motorola to design and implement an interim groundwater remedy and soil remedies in the OU1 area, and to continue to work on a revised RI/FS work plan to define work components leading to a final remedy. The remedial objectives as defined in this Consent Order are: to contain and control the migration and level of contaminants in the groundwater through implementation of the work by Motorola.
- ! In October 1989, the Motorola 52nd Street Site was placed on the U.S. EPA’s National Priorities List (NPL). The site boundaries at this time were determined to be from 52nd Street to 48th Street. Today, this area is known as OU1.
- ! Although the site was listed on the NPL, EPA delegated its authority to ADEQ to continue to be the lead agency.

- ! In 1990, a sump located within a building near the Southwest Parking Lot was identified as another source of contamination, mainly TCA. Initial soil sample results under the sump were as high as 30,000 ppb of TCA.
- ! In 1990, ADHS completed a health study entitled: *Cancer Incidence and Mortality in an East Phoenix Area Overlying Groundwater Contaminated with Volatile Organic Compounds*. The study found no elevated rates of cancer as compared to the rest of Maricopa County.
- ! On August 1990, two additional extraction wells were added to the PTP located in the Courtyard area.
- ! In February 1991, the SWPL investigation was initiated and by March a soil gas investigation was conducted. The investigation included five conventional monitor wells, one multiport monitor well in the SWPL area, and six off-site monitor wells.
- ! In June 1991, Motorola voluntarily initiated groundwater treatment for the SWPL area with two extraction wells located in the Southwest Parking Lot.
- ! From October through November 1991, another soil gas survey was conducted in the SWPL area consisting of 29 soil gas sampling locations.
- ! From 1991 through 1992, Motorola installed nine wells for the off-site extraction system on the bank of the relocated Old Crosscut Canal at approximately 46th Street between McDowell Road and Roosevelt Street. Four additional monitor wells (with a total of 26 sampling ports) were installed to monitor the OU1 effectiveness.
- ! In 1992, ADHS completed a Baseline Risk Assessment that concluded: “The risk of public exposure to groundwater is limited, and therefore causes no imminent health hazard.”
- ! In 1992, EPA completed an Ecological Risk Assessment that concluded: . . . “because of [the VOC’s] high volatility and low toxicity relative to freshwater aquatic criteria, exposure of biota to acute or chronic levels of TCA and TCE may not be a concern. Inorganics (arsenic and lead) would be of most concern to biota because of their exceedance of the fresh water criteria, persistence in the environment, and their potential for bioaccumulation.”
- ! In January 1992, Motorola conducted another soil gas survey of the SWPL area consisting of 49 soil gas sampling locations.
- ! In February 1992, Motorola submitted the final RI Report, incorporating the SWPL RI. The investigation included a groundwater monitoring network of about 80 wells and 13 extraction wells for the SWPL remediation system (totaling 190 sampling ports).
- ! In March 1992, ADEQ conducted a soil gas survey adjacent to Motorola, consisting of 41 soil vapor samples and three soil samples.
- ! In May 1992, the SWPL groundwater remedy was expanded to include an additional nine extraction wells.

- ! In May 1992, a soil vapor extraction (SVE) system was constructed in the Courtyard and by June was operational. The SVE was shutdown in March 1993. Approximately 350 pounds (lbs) of VOCs were removed.
- ! In July 1992, the Pre-Design RI Work Plan was submitted and the full-scale groundwater treatment system was placed in operation. The OU is considered an interim remedy and the final remedy will be determined after the final OU1 FS and ROD are completed. The groundwater extraction system consists of 25 on- and off-site wells that pump the contaminated groundwater to a central treatment plant, located at the 52nd Street facility, via underground double-walled pipes. The plant treats groundwater by running it through two air strippers connected in series, and is then run through four liquid phase granular activated carbon (GAC) vessels (two parallel sets of two vessels connected in series) for polishing. The treated water is then used by ON Semiconductor for their facility operations. The air emissions are treated by vapor phase GAC. Approximately 95% of the air is recycled through the air strippers and approximately five % is treated and then released to the atmosphere.
- ! In 1993, ATSDR completed an update to the 1988 Health Assessment.
- ! In February 1993, an air sparging (AS)/SVE pilot program was conducted in two locations within the SWPL area. Approximately 269 lbs of VOCs were removed.
- ! In May 1993, Motorola submitted the SWPL RI report to ADEQ. An addendum was submitted in October 1994.
- ! In May 1993, Motorola submitted the first of its effectiveness reports on OU1 operations. Effectiveness reports are submitted on an annual basis on March 31st.
- ! In June 1993, Motorola submitted the final draft SWPL RI Report.
- ! In 1994, a program was initiated to periodically remove free product solvent from bedrock.
- ! In October 1994, Motorola issued an Addendum to the draft SWPL RI Report. A supplemental attachment detailing the results of aquifer testing conducted in the SWPL area was submitted in December 1994.
- ! In April 1995, Motorola submitted the Remedial Design (Plans, Specifications, and Design) for the SWPL AS/SVE system. Motorola also submitted the Pilot Program Report detailing the SWPL AS/SVE pilot operations.
- ! In August 1995, Motorola submitted the Bedrock Ridge Model Documentation and Sensitivity Analysis for the Motorola 52nd Street Model (MI52 Model) Report.
- ! In November 1995, Motorola conducted a soil gas survey consisting of 25 sample locations of the off-site area immediately to the west of the Courtyard and the northern part of the 52nd Street facility.

- ! In November 1995, ADEQ completed the first Five Year Review of OU1. It was determined that the OU1 was operating effectively and meeting the remedial objectives.
- ! In December 1995, a multi-depth soil gas investigation was conducted within the Courtyard area consisting of 14 sample locations.
- ! In 1996, ATSDR completed an update to the 1988 Health Assessment and the 1993 update to the Health Assessment.
- ! In February 1996, Motorola submitted the MI52 Model Documentation Report presenting models of predicted groundwater flow and contaminant transport of VOCs from Motorola and other sources.
- ! In November 1996, the SWPL SVE operations began and continued through April 1997. The system consisted of six SVE wells and 19 vapor monitor points. Approximately 170 lbs of VOCs were removed during the system operation in addition to the approximately 269 lbs that had been removed during the pilot AS/SVE test in February 1993.
- ! In September 2001, ADEQ completed the second five-year review of the OU1 remedy. The purpose of a five-year review is to evaluate the effectiveness of the remedy and whether it remains protective of human health and the environment. ADEQ determined that the groundwater remedy is effective in containing and controlling the migration of the contaminants in the alluvium and in reducing the level of contaminants in the alluvium. Since site conditions have changed in the last few years, mainly the de-watering of the alluvium, ADEQ is concerned whether the remedy will continue to be effective in the future. Motorola responded to the issues identified in this report on March 28, 2002.
- ! During the year 2002, in response to the Five Year Review, Motorola conducted studies and evaluated the OU1 groundwater treatment remedy in an effort to optimize the system.
- ! In November 2002, ADEQ determined that the soil cleanup is complete in the SWPL area; one of the three areas that require soil remediation.

OU1 Hydrogeology:

- ! Two distinct geologic units have been described as the primary water-bearing formations in the OU1 area of the 52nd Street Superfund Site. These include the unconsolidated alluvium and bedrock consisting of Precambrian metarhyolite and granite as well as Tertiary volcanics and indurated sediments. Early investigations for Motorola demonstrated that groundwater and contaminants move between the alluvium and bedrock. Because these geologic units interact hydraulically and chemically, they have been classified as the alluvial-bedrock aquifer system.
- ! Recent additional analysis conducted of well boring logs, cores and cuttings in the 52nd Street Superfund Site area have shown that there are actually three kinds of unconsolidated sediments in the OU1/OU2 area: basin fill, Salt River gravels, and uppermost alluvium

(Reynolds and Bartlett 2002). Only the basin fill and the upper alluvium units underlie the OU1 area and only the basin fill is saturated in the OU1 area.

- ! The basin fill, the lowest and oldest unit, consists of slightly to moderately consolidated sandy and silty sediments and was deposited on top of the Tertiary and Precambrian bedrock units. In the western portion of the 52nd Superfund Site area, but absent from the actual OU1 area, the basin fill is overlain by very coarse, unconsolidated gravel, consisting of pebbles, cobbles, and boulders in a sandy matrix. This unit represents older channel deposits of the Salt River and is, therefore, named the Salt River gravels. The youngest unit in the 52nd Street Superfund Site area is the uppermost alluvium and consists of silt, sand, and minor amounts of gravel. The three units together fill the Phoenix basin extending west from the Papago Park area, immediately to the east of the 52nd Street facility, deepening toward the west. The term “alluvium” has been used to describe both shallow alluvium and basin fill.
- ! Combined, alluvium and basin fill vary in thickness from less than 20 feet (ft) at the 52nd Street facility to approximately 150 ft at 40th Street. The unit generally becomes thicker to the west. Cross-sectional views of the alluvial-bedrock aquifer system show the alluvium and basin fill are unconfined. The hydraulic conductivity of the basin fill in the OU1 area varies from two ft/day (0.0007 cm/sec) to approximately 50 ft/day (0.071 cm/sec).
- ! Bedrock underlying the basin fill has undergone several deformational events resulting in faulting, fracturing, rotation, and vertical and horizontal displacement. Two dominant fracture, fault, and lineament trends may be observed: a northwest-southeast trend, and a northeast-southwest trend. Hydraulic conductivity in the bedrock is strongly influenced by the presence and frequency of fractures. Measurements of hydraulic conductivity in bedrock vary from 1.4×10^{-3} ft/day (4.9×10^{-7} cm/sec) to 2.1 ft/day (7.5×10^{-4} cm/sec). Fracture densities measured in rock core samples range from one to more than 15 fractures per foot. The double porosity model best describes bedrock in the OU1 area. The double porosity model describes bedrock aquifer characteristics with hydraulic conductivity controlled by secondary porosity (fractures) and storage capacity determined by primary matrix porosity.

Operable Unit 2 History

- ! In 1983, ADEQ discovered groundwater contamination in the area known today as OU2. TCE was detected at the Desert Hills well (Monroe and 27th Street) at 640 ppb, at the Security Center well (Central Avenue and Van Buren) at 202 ppb, and at the Eastlake Park well (Jefferson and 16th Street) at 44 ppb.
- ! At the time of discovery, it was not known that Motorola’s contamination extended beyond the Old Cross Cut Canal. Therefore, the contamination discovered in this area was initially thought to be a separate contaminant plume known as the East Washington (EW) Area.
- ! From 1985 to 1989, ADEQ conducted an RI and initiated an investigation of potentially responsible parties (PRPs).

- ! In 1987, the EW area was listed on ADEQ's Water Quality Assurance Revolving Fund (WQARF) Priority List. The study area boundaries were determined to be Thomas Road to the north, Lower Buckeye Road to the south, 48th Street to the east, and 7th Avenue to the west.
- ! In July 1988, questionnaires were mailed to 995 facilities located in the EW area requesting information regarding their hazardous substance use, storage, and disposal practices.
- ! In August 1989, ADEQ's contractor (Kleinfelder) completed the Phase I Report for the EW area. For this study, a literature and records search was conducted to provide background information on the geology, hydrogeology, present and past land use, and to identify potential chemical manufacturers, users, and disposers within the EW area. The report was made available for public review and comment.
- ! Questionnaire responses were evaluated by ADEQ to determine which facilities warranted additional investigations. At the time, four companies were found to have potential sources of contamination that may have contributed to the groundwater plume: Tiernay Turbines (now Walker Power Systems), Arvin Industries, FMC Corporation, and AlliedSignal (now Honeywell).
- ! From 1990 to 1992, ADEQ and Motorola continued an area-wide groundwater investigation to define the extent of groundwater contamination in the OU2 area. Approximately 48 monitor wells, with a total of 120 sampling ports, were installed and over 300 aquifer tests were conducted.
- ! In 1992, "area wide" sampling events were coordinated to include Motorola wells and EW wells. The extent of groundwater contamination prompted ADEQ and EPA to develop a second operable unit to address groundwater contamination before a final remedy is selected.
- ! In 1992, Motorola submitted the RI Report to ADEQ which summarized the results of the investigation. The RI confirmed that contamination migrating from the Motorola facility had extended into the EW area. The report was released to the public for review and comment.
- ! In 1992, ADHS completed a Baseline Risk Assessment that concluded: "The risk of public exposure to groundwater is limited, and therefore causes no imminent health hazard."
- ! In 1992, EPA completed an Ecological Risk Assessment that concluded: "...because of [the VOC's] high volatility and low toxicity relative to freshwater aquatic criteria, exposure of biota to acute or chronic levels of TCA and TCE may not be a concern. Inorganics (arsenic and lead) would be of most concern to biota because of their exceedance of the fresh water criteria, persistence in the environment, and their potential for bioaccumulation."
- ! In 1992, EPA named additional PRPs: AlliedSignal (now Honeywell), ITT Cannon, and Tiernay Turbines (now Walker Power Systems).
- ! In 1993, EPA named the City of Phoenix a PRP as the landowner of a portion of the Honeywell and ITT Cannon properties.

- ! In 1993, Motorola issued a series of reports documenting the development and calibration of a flow and transport model that was used for the evaluation of remedial alternatives in the area from 46th Street to approximately 24th Street between McDowell and Buckeye Roads.
- ! In March 1993, Motorola submitted a draft Detailed Analysis of Alternatives for the final remedy. A report on the ranking of alternatives was submitted in October 1993.
- ! In August 1993, Motorola submitted a draft Interim Remedy FS Report. The FS covers the same area as the Final Remedy RI report and Detailed Evaluation of Alternatives. However, between March and August 1993, ADEQ and EPA determined that this would be a second interim remedy (or operable unit) that is now known as OU2.
- ! In October 1993, Motorola submitted an updated Interim Remedy FS Report to ADEQ. Motorola issued a supplement evaluating an additional end use alternative in the area of OU2. Sixty-seven alternatives were evaluated in accordance with the criteria listed in the National Contingency Plan (NCP), and remedial action objectives were proposed. The report was issued to the public for review and comment. The document was approved by ADEQ in January 1994.
- ! In 1993, ATSDR completed an update to the 1988 Health Assessment.
- ! In 1993, ADEQ and EPA issued a proposed groundwater remedy for public review and comment.
- ! On February 9, 1994, a public meeting was held to take oral comments from the public regarding the OU2 Feasibility Study.
- ! In February 1994, Motorola submitted a Hydrogeologic Investigation of Subsurface Bedrock Conditions Report of the EW Area WQARF Site. The investigations were conducted to define the magnitude and extent of a subsurface bedrock ridge suspected to occur in the area north of the Sky Harbor Airport. These results were used to assess the potential effect of the bedrock ridge on patterns of groundwater movement and the distribution of VOCs in the groundwater. A letter supplement to this report, including the results of additional drilling conducted to confirm the depth to bedrock, was submitted by Motorola in November 1994.
- ! In July 1994, ADEQ and EPA issued the ROD selecting the interim groundwater remedy. The purpose of the OU2 interim remedy is to provide additional containment of contaminated portions of the groundwater. The interim remedy includes groundwater extraction near 20th and Washington Streets, treatment of the water by ultraviolet oxidation and GAC, and discharge of the treated water to the Grand Canal for irrigation use.
- ! In 1994, ADEQ requested Honeywell, ITT Cannon, the City of Phoenix, and Motorola to implement the groundwater remedy (Walker Power Systems is located outside of the OU2 area).
- ! In 1995, ADEQ issued a no further action (NFA) letter to ITT Cannon.

- ! In 1996, ATSDR completed an update to the 1988 Health Assessment and the 1993 update to the Health Assessment.
- ! In February 1996, Motorola submitted the MI52 Model Documentation Report presenting models of predicted groundwater flow and contaminant transport of VOCs from Motorola and other sources.
- ! In October 1996, Motorola and the City of Phoenix signed a Consent Decree with ADEQ to implement the design of a groundwater containment and treatment system for OU2. Honeywell withdrew from the agreement and did not participate in the design.
- ! In 1997, Arizona's WQARF program statutes were revised by the Legislature. Among other changes, the Priority List was replaced with a Registry. This involved evaluating all former Priority List sites and re-listing on the new Registry those sites that the State determined required additional investigation. In evaluating the EW area for listing on the Registry, the fact that the contaminants related to the M52 site had co-mingled with a significant portion of the EW area was considered. In order to prevent the duplication of work and funding, ADEQ and EPA determined that the investigation of groundwater contamination from 52nd Street to Seventh Avenue would continue under the federal Superfund program. Since the site was being addressed under another program, ADEQ did not list the EW area on the Registry.
- ! The EPA delegated its authority to ADEQ to continue to be the lead agency for the OU2 area.
- ! In October 1997, Motorola submitted the OU2 Preliminary (30%) Design to ADEQ.
- ! In September 1998, Motorola submitted the OU2 Pre-Final (90%) Design to ADEQ.
- ! On November 30, 1998, EPA issued a unilateral administrative order (UAO) to Motorola and Honeywell for construction, start up, and two years of operation and maintenance of the groundwater treatment system. A UAO from the EPA was necessary since negotiations between ADEQ, Motorola, and Honeywell had broken down. EPA would then become the lead agency for the remedial action phase for OU2.
- ! In July 1999, Motorola submitted the OU2 Final (100%) Design to ADEQ.
- ! On November 1999, Honeywell and Motorola submitted the OU2 Remedial Action Work Plan to EPA.
- ! On December 28, 1999, ADEQ approved the Final 100% Design.
- ! In March 2000, under the oversight of the EPA, construction of the treatment system began and was completed in September 2001. Start-up activities then proceeded.
- ! On September 24, 2001, the Construction Completion Notification was provided to EPA.

- ! On September 26, 2001 and October 23, 2001, the pre-final and final construction inspections were conducted by ADEQ and EPA.
- ! On December 6, 2001, Motorola and Honeywell (The Companies) submitted the Construction Completion Report.
- ! On December 13, 2001, the OU2 groundwater treatment system became fully operational, designed to pump at a rate of approximately 5,000 gallons per minute (gpm).
- ! Throughout the first year of operations, the pumping rates of the OU2 system have been reduced several times. The steadily declining regional groundwater levels have reduced the saturated thickness of the Salt River gravels (the primary groundwater aquifer), thereby reducing the amount of groundwater available for pumping. As of November 2002, the pumping rate has been reduced to 2,650 gpm.
- ! Motorola conducted an additional investigation of the bedrock ridge area and submitted a report of the results in May 2002.

OU2 Hydrogeology

- ! The OU2 Area hydrogeology consists of two primary alluvial units: the Salt River gravels and the basin fill. Both of these units are geologically distinct but hydraulically connected. The Salt River gravels are a coarse grained deposit, with a higher permeability, whereas the basin fill deposits are a finer grained deposit and less permeable than the Salt River gravels. These alluvial units are underlain by a buried bedrock pediment consisting of tilted and faulted mid-Tertiary (sedimentary breccias, conglomerates, and sandstones; fine-grained clastics; and volcanics) and Proterozoic (metarhyolite and granites) rocks. This pediment is exposed at Papago Park but becomes buried to the west toward Sky Harbor Airport. This buried pediment has a very gentle slope to the west but contains at least two broad, low-relief features: a broad trough cut into Tertiary sedimentary deposits and a northwest-trending bedrock ridge located to the north of Sky Harbor Airport and under the Honeywell 34th Street facility.
- ! The OU2 system extraction wells are installed into Late Tertiary and Quaternary alluvial sediments. These deposits comprise approximately the upper 240 ft of geologic material above the sedimentary/igneous bedrock in this area of the Salt River Valley. Over the years, the unconsolidated deposits of the Salt River Valley have been defined as part of various geologic and hydrogeologic investigations and refined as more subsurface information became available. Reeter and Remick (1986) subdivided the unconsolidated deposits into three stratigraphic units (from oldest to youngest): the lower conglomerate unit (LAU), the middle alluvial unit (MAU), and the upper alluvial unit (UAU). Anderson, Freethy and Tucci (1990) informally redefined these deposits from a hydrostratigraphic basis (from oldest to youngest): pre-Basin and Range sediments, lower basin fill, upper basin fill, and stream alluvium. Hammett and Herther (1995) further refined the classification of these deposits into three stratigraphic units (from oldest to youngest): lower basin fill, upper basin fill, and

alluvium. Most recently, the deposits in the vicinity of OU2 were subdivided into three stratigraphic units (from oldest to youngest): basin fill, Salt River gravels, and uppermost alluvium (Reynolds and Bartlett, 2002). From a hydrogeologic standpoint, the most important distinction between these units relates to their respective permeabilities. The basin fill has a hydraulic conductivity of from one to 60 ft/day. The Salt River gravels have a considerably higher hydraulic conductivity of between 200 and 450 ft/day (Reynolds and Bartlett, 2002).

- ! The oldest unconsolidated sedimentary deposit in the OU2 area is the basin fill unit. The basin fill is characterized by the presence of abundant silt and sand with lesser amounts of clay and gravel. These deposits are more compacted than the overlying Salt River gravels (Hammett and Herther, 1995). In the vicinity of the OU2 treatment plant, the basin fill ranges in thickness from 50 to 140 ft.
- ! The Salt River gravels are described as well-rounded gravel, cobbles, and boulders in a sandy matrix. The Salt River gravels are considered fluvial deposits associated with the ancient Salt River (Reynolds and Bartlett, 2002). In the vicinity of the OU2 treatment system, the Salt River gravels range in thickness from 110 to 170 ft.
- ! The uppermost unit is the Quaternary alluvium. This unit is a mixture of sand, silt, and clay with varying amounts of gravels. Locally, above this unit is artificial fill material. Overall this material ranges in thickness from two to 20 ft and does not affect the hydraulic characteristics of the OU2 area groundwater since this unit is well above the groundwater table.
- ! In September 2001, groundwater was encountered in the Salt River gravels at a depth of about 80 ft below ground surface (bgs) at the OU2 treatment plant and extraction well system. By September 2002, groundwater levels were at a depth of 92 ft bgs in the Salt River gravels. Because of the extended drought conditions in the Phoenix area, groundwater levels have declined about ten to 12 feet in wells throughout the monitoring well network.

Honeywell History:

- ! The Honeywell 34th Street facility was constructed in 1951 and continues to operate today. Historically, the Honeywell facility has operated under the names of AiResearch Manufacturing Company of Arizona, Garrett Turbine Engine Company, and AlliedSignal Aerospace Company.
- ! The Honeywell 34th Street facility is approximately 118 acres and consists of more than 130 buildings. Honeywell and its predecessors have conducted jet engine design, assembly, testing, and repair facilities at the site.
- ! Some of the chemicals that are known to have been used at the facility are: lubricating and cutting oils, paints and paint stripper, acids for etching, metal solutions for plating, various types of jet fuel, and solvents used for vapor degreasing, cleaning jet engines, and as a refrigerant.

! Releases of contaminants to the environment have occurred in a number of different ways at the Honeywell facility. Degreasers, dry wells, underground and above ground storage tanks, underground piping and trenches, chemical storage areas, solvent recycling areas, and areas of handling/transferring solvents are all considered potential sources of contamination at the Honeywell facility. The following are examples of how chemicals were used and the pathway for environmental contamination:

The facility used about 65 vapor degreasers (used to clean engine parts) from 1955 through 1995 that contained a variety of different solvents including TCE, TCA, and Freon. Spills occurred occasionally when handling parts, cleaning the degreasers, and replacing the solvent.

TCE was also used as a refrigerant from 1955 to 1984 in two low temperature engine testing chambers located in Building 202. It's estimated that 18,000 gallons of TCE were contained in the system. Each chamber is located over a concrete pit that collected wastes from the operation of these chambers. In 1993, samples collected from these pits indicated high levels of TCE. These pits were not designed to contain liquid hazardous waste.

Throughout the facility, there were approximately 50 dry wells and approximately 165 sumps. The dry wells were used for collecting storm water runoff and drainage from about 50 jet engine test cells where solvents (TCE, TCA, and freon) were used. A system of trenches and pipes inside the test cells was used to route the waste water, oils, solvents, and spilled jet fuel to a series of dry wells. Eventually the dry wells were replaced with concrete sumps. Samples collected from the test cell wastes indicated very high levels of jet fuel components and solvents.

Beginning in 1951, the oil chip yard (located west of Building 102) was the main chip, oil, and acid storage area for the facility. There was a trench and sump system that was designed to catch runoff from the metal chips that were coated with cutting oils and solvents from machining. This area also housed an oil reclamation facility, a solvent distilling machine, and two underground and above ground storage tanks. The oil chip yard also became the main area for TCE and TCA handling, dispensing, storage, and recycling. The highest concentrations of TCA in groundwater (40,000 ppb) found at the facility were collected from a monitor well in this area.

In Area 4 (the western area of the facility) it is known that workers disposed of solvent wastes on the ground. Also, there are records of solvent spills in some of the buildings and photographs of soil staining in the area. This area was a large waste storage area for drums of chemicals plus the oil and solvent coated chips. Spills from this area were directed to a trench and sump system that was not designed to hold liquid hazardous waste.

! In June 1983, a preliminary assessment (PA) was completed by EPA. The purpose of the PA was to review existing information regarding the facility and assess the threat, if any, posed to public health, welfare, or the environment, and to determine if future action under the Comprehensive Environmental Response Compensation and Liability Act

(CERCLA)/Superfund Amendment and Reauthorization Act (SARA) may be warranted. EPA determined that further investigation of the site would be necessary.

- ! In 1983, the Honeywell 34th Street facility was identified as a potential hazardous waste site and entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS).
- ! From 1985 to 1986, Honeywell implemented an Underground Storage Tank (UST) Replacement Program of tanks that were installed in the mid-1950's. A total of 15 tanks were removed and 20 new tanks were installed. Honeywell stated that these 30 year old USTs were in good working condition when they were removed and there was no evidence of leaks.
- ! In May 1988, Honeywell submitted a Sump Removal Proposal to remove 25 sumps. Honeywell proposed to collect soil samples only if there was visual evidence of soil staining. Approximately one year earlier, in 1987, Honeywell collected liquid samples from these sumps that indicated the presence of solvents, such as: TCA at 8,900,000 ppb; TCE at 5,300,000 ppb; PCE at 26,200 ppb; and Freon at 380,000,000 ppb. In 1998, ADEQ requested all data associated with the sump removal project pursuant to A.R.S. § 49-288. The 1987 VOC data was submitted to ADEQ for the first time in October 2000 pursuant to a second request.
- ! In 1988, ADEQ sent a facility questionnaire to Honeywell regarding three of its facilities in the East Washington Area.
- ! In 1988, ADEQ requested Honeywell to submit a proposal for site characterization.
- ! In January 1989, Honeywell submitted a letter to ADEQ with a sump removal report and plans to proceed with remedial action alternatives.
- ! In February 1989, ADEQ issued a letter to Honeywell indicating that the extent of contamination associated with the removed sumps was not defined.
- ! In August 1989, ADEQ's contractor (Kleinfelder) completed the Phase I Report for the EW Area. The Report identified the Honeywell 34th Street facility (one of several facilities) as a potential source to the regional groundwater contamination.
- ! In 1990, shallow soil gas sampling was conducted on-site.
- ! In February 1991, Honeywell submitted a draft Phase I Record Search Report as part of ADEQ's 1988 request for information.
- ! On April 30, 1991, ADEQ issued an Opportunity Letter to Honeywell to voluntarily conduct work, such as installing a groundwater monitor network and conducting soil gas surveys.
- ! On August 15, 1991, ADEQ submitted a second opportunity letter to Honeywell to install a groundwater monitoring well network.

- ! In August 1991, Honeywell submitted a work plan to install monitor wells in response to ADEQ's opportunity letters. The work plan was approved by ADEQ in June 1992.
- ! From July to August 1992, Honeywell installed nine monitor wells. Groundwater quality data from these monitor wells indicated elevated concentrations of: TCE, TCA, dichloroethene (DCE), dichloroethane (DCA), vinyl chloride, and other VOCs.
- ! In November 1992, the EPA issued a general notice letter identifying Honeywell as a PRP in the Motorola 52nd Street Superfund site.
- ! In February 1993, ADEQ issued an opportunity letter to Honeywell for additional groundwater and soil investigations.
- ! In September 1993, ADEQ completed a preliminary re-assessment of the Honeywell facility.
- ! From June through August 1994, Honeywell conducted a shallow soil gas survey that consisted of 161 locations throughout the facility.
- ! In August 1994, soil sampling was conducted in Building 202 in response to an anonymous phone complaint.
- ! In 1995, Honeywell installed 16 additional groundwater monitor wells and conducted a seismic refraction investigation to characterize the subsurface bedrock ridge.
- ! In 1995, Honeywell discontinued use of TCA at the facility.
- ! In February 1995, ADEQ sent an opportunity letter to Honeywell to contribute to the preparation of a regional groundwater flow and transport model.
- ! In early 1997, four groundwater monitor wells and two groundwater piezometers were installed.
- ! In April 1997, a second phase of the seismic refraction investigation was conducted to characterize the subsurface bedrock ridge.
- ! In May 1997, three deep soil gas borings were drilled in the Old Oil Chip Yard (source area).
- ! In June 1997, a shallow soil gas survey was conducted in the Old Oil Chip Yard area that consisted of 44 locations. VOCs were detected as high as 2,500 ppb.
- ! In June 1997, an SVE pilot test was conducted based on the soil gas data collected in the Old Oil Chip Yard, around Building 140. Initial VOC concentrations in the influent were 7,500 ppb.
- ! From August 1997 through November 1999, a full scale SVE system was voluntarily operated in the Old Oil Chip Yard. The system consisted of four soil vapor piezometers, two extraction wells, two GAC vessels, and two potassium permanganate impregnated zeolite

vessels (to treat vinyl chloride). The SVE system removed approximately 2,600 lbs of solvents and about 207,000 lbs of jet fuel from the soil. The SVE system is not currently in operation.

- ! In 1998, ADEQ issued an information request pursuant to A.R.S. §49-288 to Honeywell. ADEQ specifically requested documentation and data associated with the 1988 sump removal project.
- ! In July 1998, ADEQ issued a letter with an attached statement of work to Honeywell to conduct an additional soil gas survey at 175 locations and to install 13 additional groundwater monitor wells.
- ! From December 1998 through January 1999, Honeywell executed ADEQ's July 1998 statement of work.
- ! In 1998, two additional monitor wells were installed.
- ! In Spring 1999, 12 additional monitor wells were installed.
- ! In April 1999, Honeywell detected floating free product of jet fuel in several on-site groundwater monitor wells.
- ! During the months of April, May, and June, 1999, Honeywell sampled the floating free product to have it fingerprinted and analyzed for VOCs. The fingerprint indicated that the floating free product was a mixture of JP-4, Jet A, and JP-10. The maximum VOC concentrations reported were: TCE at 99,000 ppb; Freon 113 at 23,000 ppb; Freon 11 at 11,000 ppb; 1,1-DCA at 24,000 ppb; cis-1,2-DCE at 190,000 ppb; and vinyl chloride at 80,000 ppb.
- ! In August 1999, Honeywell reported the discovery of free product in its quarterly groundwater monitoring report. The fingerprint and VOC data was submitted in February and August 2000, respectively, in response to ADEQ inquiries.
- ! On September 19, 1999, Honeywell entered into an administrative order on consent (AOC) with ADEQ to conduct a focused remedial investigation. The AOC requires Honeywell to identify and characterize the potential source areas at the facility, to define the lateral and vertical extent of contamination, and to pay all of the State's oversight costs.
- ! In December 1999, pursuant to the AOC, Honeywell submitted a Research Report which details the facility's historical chemical uses, handling practices, and known or suspected releases. Additionally, Honeywell submitted a work plan to install groundwater monitor wells.
- ! In February 2000, at ADEQ's request, Honeywell submitted analytical data for the floating free product. However, the laboratory report contained only the fingerprint analysis because Honeywell instructed the lab to remove the VOC data from the report.

- ! In March 2000, ADEQ approved Honeywell's proposal to begin the removal of the floating free product. From April to June 2000, Honeywell shipped the recovered jet fuel/solvent mixture to a recycling/disposal facility. In August 2000, Honeywell submitted the VOC data that it had collected in 1999 in response to ADEQ inquiries. In February 2001, ADEQ issued a notice of violation (NOV) to Honeywell and to the disposal facility for the illegal transport of hazardous waste.
- ! In July 2000, 12 monitor wells were installed to investigate potential sources.
- ! In August 2000, Honeywell submitted a Conceptual Site Model to ADEQ.
- ! In October 2000, February 2001, and November 2001, Honeywell submitted responses to ADEQ comments and supplemental information to the Research Report.
- ! In March 2001, Honeywell discovered a small amount of pure mercury in the storm drain outside Building 301. The storm drain was removed and the soils around the pipe were excavated. Samples were collected throughout the trench and analyzed for mercury. Concentrations of mercury were as high as 2,600,000 ppb.
- ! In May 2002, the Potential Source Area Investigation Report was submitted pursuant to the AOC.
- ! ADEQ determined that additional work was needed to identify and characterize potential source areas. In response, and pursuant to the AOC, Honeywell submitted a work plan that was approved by ADEQ in July 2002.
- ! From July through August 2002, a soil gas survey (shallow and deep) was conducted throughout the facility, including the interior of buildings, to identify potential source areas.
- ! From August through September 2002, 20 multiport soil vapor monitor (SVM) wells were installed where known releases have occurred and/or historical VOC concentrations in soil gas were elevated. The SVM wells were sampled for VOCs in October, November, and December 2002. The data collected from the SVM wells will be assessed to determine if a continuing source to groundwater exists.
- ! On January 15, 2003, Honeywell submitted the draft Additional Site Characterization Work Plan to conduct additional monitor well installations on and off the facility property to define the lateral and vertical extent of its contamination.
- ! In February 2003, Honeywell conducted a bioventing pilot study to collect information to assess if this technology is appropriate to remove the floating free product jet fuel/solvent mixture.

Honeywell Hydrogeology

- ! The lithology within the vicinity of the Honeywell facility is subdivided into three units: Salt River gravel, basin fill, and bedrock.
- ! The bedrock units underlying the facility include Tertiary Camels Head Formation and the Tempe Beds Formation. The Zoo Breccia member of the Camels Head Formation is a well-cemented, massive, poorly stratified breccia consisting of a fine-grained sand to silt matrix with gravel to boulder size clasts of granite and meta-rhyolite. Numerous high angle faults were observed in outcrop, which, together with the indurated nature of the rock, suggest that the fractures are the primary source of permeability.
- ! There is an underground bedrock rise near the Honeywell facility that has been identified through bore hole drilling, as a low ridge trending northwest approximately 6,000 ft from near the southern facility property line in the central portion of the facility to north of Van Buren Street and 28th Street. The bedrock rise is a series of low hills (maximum relief of approximately 90 ft) separated by saddles. There are two saddles in the bedrock ridge near Honeywell: (1) the central saddle, located just north of the facility under East Madison and 32nd Streets, and (2) the southern saddle, located under the southeastern portion of the facility property. The bedrock ridge is important because of its impact on groundwater flow and solute transport directions near the Honeywell facility.
- ! Salt River gravel is composed predominantly of unconsolidated sands, gravels, and cobbles, with minor amounts of silt and fine-grained sand. The presence of exotic clasts, comprised of lithologies foreign to the underlying bedrock units, as well as the mountains surrounding the basin, indicates that at least a portion is derived from river deposits transported from outside of the basin. The Salt River gravel appears to pinch out approximately one mile east of the facility and the upper portion of the alluvium becomes more fine-grained. These finer grained soils appear to have originated as locally derived, coalescing alluvial fan deposits shed from bedrock areas to the east. Some of the sediment within the upper portion of the alluvium near the facility may also be locally derived alluvial fan sediments interbedded with the Salt River gravel.
- ! The basin fill is a finer grained section of sediment that is frequently found underlying the Salt River gravel in the vicinity of the facility. The basin fill are generally comprised of silts and silty sands, with some clayey silts and clay stringers; approximately 40% to 60% silt and the remaining fraction is fine-grained sand. Where the bedrock is deep enough, a coarser-grained section of the basin fill is encountered. This lowermost portion of the basin fill consists of interbedded gravel, medium to coarse sand, silty-sandy gravel, and silty-gravelly sand. Some of the gravel clasts are exotic, which suggest a foreign source. However, interbedding of the cleaner gravel with silty-sand and gravel suggests that the depositional environment consists of coalescing alluvial fans with concurrent deposition by a river system with its headwaters derived from outside the local basin.
- ! In September 2002, the general direction of groundwater flow beneath the facility in the Salt River gravel and basin fill is to the southwest and west. Depth to groundwater in September 2002 ranged from 66 to 90 ft bgs at and in the vicinity of the Honeywell facility.

Groundwater in recent years has been declining as much as ten feet per year. Over the years, surface water releases to the Salt River during flow events impact water levels and flow directions in the vicinity of the Honeywell facility.

Operable Unit 3 History:

- ! OU3 was formerly part of the EW Area which was listed on the WQARF Priority List in 1987. In 1997 the East Washington area was not re-listed on the new WQARF Registry (See Operable Unit 2 Site History).
- ! On November 26, 1997, EPA sent a letter to ADEQ creating a third operable unit and establishing the study area boundaries.
- ! In June 2000, EPA completed its groundwater flow and transport model for the site. One objective of the model was to assess the possibility of contaminants from Motorola and Honeywell source areas migrating beyond OU2.
- ! On February 25, 2000, EPA sent a letter to ADEQ which stated that after conducting its own modeling effort, EPA has concluded that the down gradient boundary (7th Avenue) for the study area is appropriate. EPA further stated that with the available information to date, it appears that Motorola's releases are not likely to have migrated beyond 7th Avenue.
- ! In December 2001, EPA completed a work plan to conduct a groundwater investigation. Drafts of this work plan were made available to the public for comment.
- ! In Spring 2002, EPA installed 15 groundwater monitor wells to investigate the nature and extent of groundwater contamination in the area. Monitoring wells in clusters of up to three were installed to define the vertical extent of contamination.
- ! In January 2003, EPA completed a supplement to the work plan to install additional monitor wells that are needed to complete the groundwater investigation.

OU3 Hydrogeology:

- ! EPA, with support from ADEQ, is currently investigating the hydrogeology of the OU3 area.
- ! At the OU2/OU3 boundary, weathered bedrock extends from about 158 to 240 ft bgs. Crystalline bedrock was identified at about 240 ft bgs on the east side of OU3 and dips towards the west where it is encountered at 400 ft bgs.
- ! Groundwater within the OU3 study area is primarily found within unconsolidated alluvium (the alluvial aquifer). The top of the groundwater table has been measured at 50 ft bgs to 85 ft bgs, with an average depth of 65 ft bgs. It is estimated that the alluvial aquifer is at least 160 ft thick.

- ! Groundwater generally flows west and southwest with a horizontal gradient of 0.003 to 0.005. The hydraulic conductivity of the alluvial aquifer ranges from 5.6 ft/day to 450 ft/day.

Site Status:

Operable Unit 1

- ! On April 1, 2003, Motorola shut down the groundwater treatment system upon discovering cracks in the carbon vessels that are used to treat the vapor.
- ! On April 2, 2003, Motorola reported the shut down to ADEQ and subsequently submitted a proposal on May 9. The proposal included removing the air emission controls rather than replacing the carbon vessels. Motorola calculated that the uncontrolled air emissions of VOCs would be less than three pounds per day. Motorola believed that venting the VOC contaminated vapor directly into the atmosphere would not violate any Maricopa County Air Quality Rules.
- ! On June 25, 2003, ADEQ held a community advisory group (CAG) meeting to discuss Motorola's proposal. The community members voiced many concerns with removing the air emission controls and communicated that they were very opposed to Motorola's proposal.
- ! On July 11, 2003, Motorola submitted a revised proposal to ADEQ stating that the air emission controls will be replaced.
- ! As of December 31, 2002, approximately 2.2 billion gallons of water have been treated and approximately 14,872 lbs of VOCs as TCE have been removed. This includes approximately 127 pounds of free product solvent recovered from one monitor well located on the facility.
- ! As of March 2003, the highest concentration of TCE found in OU1 is 5,800 ppb.
- ! On March 31, 2003, Motorola submitted the annual effectiveness report for 2002 operations of the groundwater treatment system. This document is currently undergoing review by ADEQ.
- ! ADEQ will be evaluating soil remediation efforts in the Courtyard and ATP areas within the year. The soil vapor extraction system in the Courtyard is not currently in operation.
- ! Since the OU1 groundwater remedy is interim, a final FS and a final ROD will need to be completed before the final groundwater remedy can be determined. Within the year, ADEQ and Motorola will create a scope of work that will structure the final FS.
- ! Within the year, ADEQ and Motorola will conduct an assessment of the potential for indoor air vapor intrusion.

Operable Unit 2

- ! To date, over two billion gallons of groundwater have been treated and 4,020 lbs of VOCs have been removed.
- ! Progress reports are submitted on a monthly basis and groundwater monitoring reports are submitted on a quarterly basis.
- ! On April 10, 2003, the Companies (Motorola and Honeywell) submitted the Remedial Action Report. This document is undergoing review from both EPA and ADEQ.
- ! On April 11, 2003, the Companies submitted the first OU2 Annual Effectiveness Report. This report must provide documentation that shows that the OU2 groundwater treatment system has attained capture of the contaminant plume. This report is currently undergoing review from both EPA and ADEQ.
- ! The Companies are installing eleven additional groundwater monitor wells to obtain additional information regarding the capture zone. The four locations are near the following intersections: (1) Patricio and Polk Streets, (2) 19th and Van Buren Streets, (3) 19th and Adams Streets, and (4) 18th and Jefferson Streets.
- ! EPA is currently conducting a PRP search in OU2. It is anticipated that additional PRPs will be general noticed before the end of the year.
- ! During the next several months, ADEQ will be negotiating a cost recovery agreement with Motorola and Honeywell. This agreement will replace the existing EPA grant that is used to pay for the State's oversight costs.

Honeywell

- ! As of September 2002, the highest concentration of TCE found on the Honeywell facility is 310 ppb.
- ! On March 3, 2003, Honeywell began the installation of 31 groundwater monitor wells, in clusters of up to three. These monitor wells will aid in defining the lateral and vertical extent of Honeywell's contaminant plume at and emanating from its 34th Street facility. The monitor wells will be installed at the following locations: (1) six on the Honeywell facility, (2) three around the northern runway of Sky Harbor Airport, (3) one at 33rd and Washington Streets, (4) one at 32nd and Washington Streets, (5) two at 32nd and Madison Streets, (6) two at 30th and Madison Streets, (7) three at 30th and Madison Streets, (8) two at 29th and Washington Streets, (9) Airline Blvd and approximately the 2800 block, (10) two at 25th and Harrison Streets, (11) two at 23rd and Washington Streets, (12) two at 22nd and Jackson Streets, (13) one at 32nd and Madison Streets, and (14) a boring to tag bedrock at 32nd and Washington Streets.

- ! Within the next several months, ADEQ and Honeywell will assess the soil gas data collected from over 60 monitoring points throughout the facility. A model will be used to predict if these concentrations of VOCs in the soil gas are a potential threat to groundwater.
- ! On July 18, 2003, Honeywell submitted a Corrective Action Plan (CAP) to ADEQ. This plan evaluates three different technologies to remove the jet fuel/solvent mixture floating on top of the groundwater table. The CAP is undergoing review by the UST and Superfund sections of ADEQ and EPA.

Operable Unit 3

- ! The EPA has completed the installation of monitor wells in the OU3 Study Area to further define the nature and extent of groundwater contamination. Monitor wells in clusters of up to two will be installed at the following locations: (1) Fillmore and 5th Street, (2) McKinley and 5th Avenue, (3) Washington and 6th Avenue, (4) Buchanan and 1st Street, (5) Washington and 16th Street, (6) Fillmore and 15th Street, and (7) Garfield and 16th Street.
- ! EPA is conducting a PRP search in OU3. It is anticipated that additional PRP's will be General Noticed before the end of the year.
- ! Union Pacific has proposed to voluntarily conduct an investigation at its facility under EPA oversight.

Contaminants:

The current contaminants of concern in groundwater include TCE, TCA, DCE, DCA, vinyl chloride, and PCE. Contaminants of concern at the site may change as new data become available.

Public Health Impact:

Currently, there are no drinking water supply wells impacted by the site. Drinking water is supplied by the city of Phoenix distribution system from surface water located outside of the site. The drinking water supplied to homes in the site area is regularly tested by the city of Phoenix. If anyone has any knowledge of private wells located within the Motorola 52nd Street site, please contact the ADEQ Project Manager.

Community Involvement Activities:

The following recent newsletters and fact sheets have been developed and distributed by ADEQ: Motorola 52nd Street Superfund Site Environmental Bulletin, Honeywell Investigation, January 2002 and the Motorola 52nd Street Superfund Site Environmental Bulletin, March 2003.

ADEQ and EPA established a community advisory group (CAG) in early 2001 and held the first meeting of the CAG in May 2001. The CAG meets on a regular basis. CAG meeting agendas and minutes can be found at <http://www.adeq.az.us/environ/waste/sps/reg.html>.

Information Repositories:

Interested parties can review site information at the information repositories located at the Phoenix Public Library, Saguardo Branch located at 2802 North 46th Street in Phoenix, (602) 262-6801, and the Phoenix Public Library, Central Branch located at 1221 N. Central Avenue in Phoenix, (602) 262-4636. Site files are also located at the ADEQ main office located at 1110 West Washington Street, Phoenix. Site information at ADEQ is available for review Monday through Friday from 8 a.m. to 5 p.m. To arrange for a time to review the public site file, please call the ADEQ Records Center (602) 771-4378 or (800) 234-5677 (Arizona toll free).

Contacts:

| Name | Phone/Fax | Email |
|---|-------------------------------------|------------------------------|
| Kris Kommalan, ADEQ Project Manager | (602) 771-4193*/ (602) 771-4272 | kommalan.kris@ev.state.az.us |
| Nadia Hollan, EPA Project Manager | (415) 972-3187**/ (415) 947-3526 | hollan.nadia@epa.gov |
| Viola Cooper, EPA Community Involvement Coordinator | (415) 972-3243**/ (415) 947-3528 | cooper.viola@epa.gov |

*In Arizona, but outside the Phoenix area, call toll-free at (800) 234-5677.

**Call EPA's toll-free message line at (800) 231-3075.